

TABLE 12-45
COMPARISON OF ANALYTE CONCENTRATIONS AT TOXICITY TEST LOCATIONS WITH SEDIMENT BENCHMARKS
REFERENCE AREA

REMEDIAL INVESTIGATION REPORT
STRATFORD ARMY ENGINE PLANT
STRATFORD, CONNECTICUT

LEPTOCHEIRUS TOXICITY RESULTS	Concentration (mg/kg)			Hazard Quotient (HQ)		
	SDUS001A 5/18/1999	SDUS002A 5/18/1999	SDUS003A 5/18/1999	SDUS001A 5/18/1999	SDUS002A 5/18/1999	SDUS003A 5/18/1999
SAMPLE ID						
SAMPLE DATE						
% SURVIVAL	39 ^a	90	22 ^a	39 ^a	90	22 ^a
GROWTH*	1.10 ^b	0.87	0.72 ^b	1.10 ^b	0.87	0.72 ^b
MEAN FECUNDITY	86 ^b	91	38 ^b	86 ^b	91	38 ^b
MEAN OFFSPRING PRODUCTION**	d	41	d	d	41	d
Compound	ERM (mg/Kg)					
Aluminum		5730 J	1790 J	4090 J		
Antimony		0.69 BN	0.44 UN	0.61 BN		
Arsenic	70	2.4	0.74 B	1.7	0.03	0.01
Barium		25.8 B	6.5 B	15.3 B		
Beryllium		0.25 B	0.08 B	0.19 B		
Cadmium	9.6	0.74 B	0.31 B	0.6 B	0.08	0.03
Chromium	370	38.7 N	9.1 N	36.9 N	0.10	0.02
Cobalt		5.7 B	2.2 B	4.5 B		
Copper	270	124	38.3	129	0.46	0.14
Cyanide, Total		0.31 U	0.27 U	0.33 U		
Hydrogen Cyanide		NA	NA	NA		
Iron		10500 J	3660 J	7810 J		
Lead	218	22.4	6.2	20.1	0.10	0.03
Manganese		142	55.2	117		
Mercury	0.71	0.16 B	0.07 U	0.17 B	0.2	0.1
Methyl mercury		0.00164	0.00007	0.00091		
Nickel	51.6	NA	NA	NA		
Selenium		0.72 BN	0.52 BN	0.76 BN		
Silver	3.7	0.26 U	0.24 U	0.27 U	0.07	0.06
Vanadium		14.9	4.7 B	11.2		
Zinc	410	89.5 N	26.3 N	78.5 N	0.2	0.1
Acetone		0.005 U	0.004 U	0.005 U		
2-Methylnaphthalene	0.67	0.11	0.026	0.13	0.2	0.04
Acenaphthene	0.5	0.21	P 0.04	P 0.24	P 0.42	0.08
Acenaphthylene	0.64	0.035 U	0.03 U	0.035 U	U 0.05	0.05
Anthracene	1.1	0.036	0.0064	0.029	0.03	0.01
Benzo[a]anthracene	1.6	0.088	0.022	0.1	0.06	0.01
Benzo[a]pyrene	1.6	0.14	0.035	0.16	0.09	0.02
Benzo[b]fluoranthene		0.12 P	0.03 P	0.14 P		
Benzo[ghi]perylene		0.1	0.019 P	0.11		
Benzo[k]fluoranthene		0.071	0.017	0.079 P		
Chrysene	2.8	0.12	0.024	0.11	0.04	0.01
Dibenz[a,h]anthracene	0.26	0.013	0.0051 U	0.019	0.05	0.02
Dibenzofuran		NA	NA	NA		
Fluoranthene	5.1	0.23	0.036 P	0.25	0.05	0.01
Fluorene	0.54	0.0085 P	0.0032 P	0.011 P	0.02	0.01
Indeno[1,2,3-cd]pyrene		0.069	0.019	0.089		
Naphthalene	2.1	0.035	0.011 U	0.02 P	0.02	0.01
N-Nitrosodiphenylamine		NA	NA	NA		
Phenanthrene	1.5	0.13	0.018	0.11	0.09	0.01
Pyrene	2.6	0.25	0.045	0.27	0.10	0.02
Total PAHs	44.792	1.76	0.373	1.9	0.04	0.01
Aroclor-1248		0.015 U	0.012 U	0.015 U		
Aroclor-1254		0.0052 U	0.0044 U	0.0053 U		
Aroclor-1260		0.03	0.012 U	0.033		
Total PCBs	0.18	0.0667	0.0377	0.0714	0.37	0.21
Total Organic Carbon (TOC)		19500	9280	37000		
Percent Fine Grain (<0.074 mm)		25	8	31		

Notes:

All concentrations in mg/kg

* - Growth is mean dry weight (mg/surviving organism; std. dev. not shown)

** - Mean Fecundity is % females with eggs

a - Significantly different from the control based on percent survival.

b - Samples that had no surviving organisms or significantly less survival than the control are not included in statistical analyses.

c - Sample had no surviving mature females.

d - Sample was not analyzed for offspring production because sample was already significantly different from the control based on survival.

E - report value less than Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit

F - Dilution

G - estimated value

H - Tentatively Identified Compound

I - a greater than 25% difference was detected between GC columns

J - Not detected at detection limit

K - post-digestion spike (analytical spike) is out of of control limits (85%-115%), while sample absorbance is less than 50% of "spike" absorbance

NA - not applicable / not available